Verification of INTT ladder geometry and clustering

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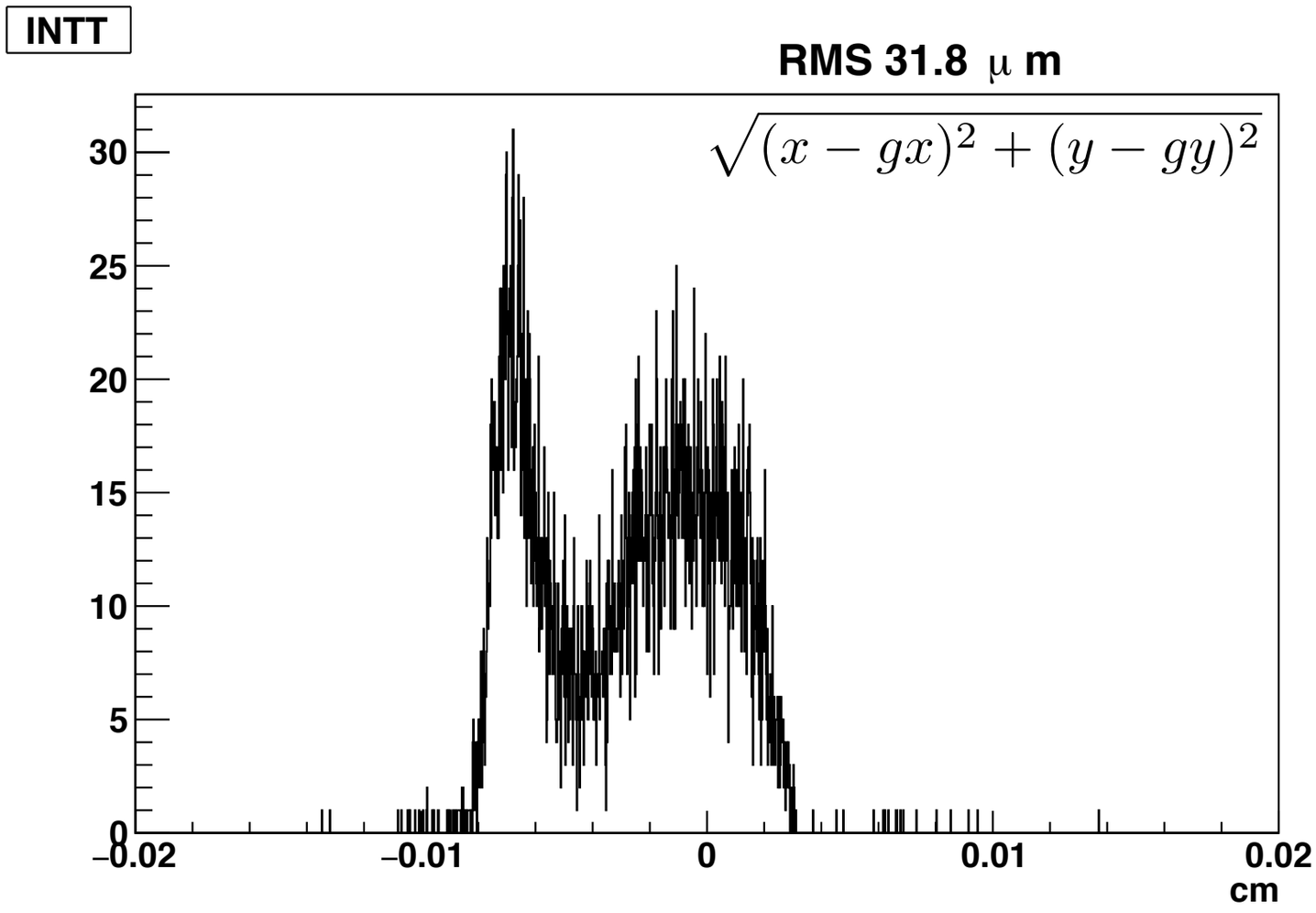
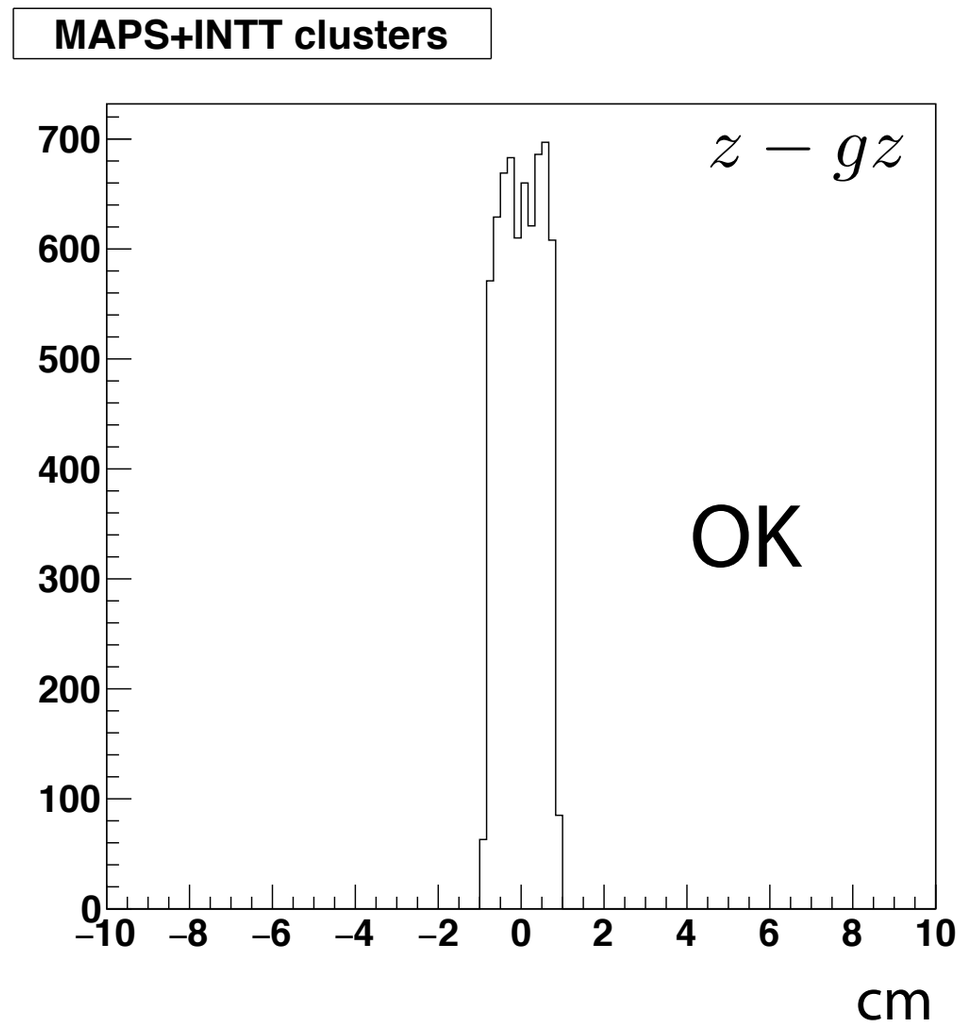
Nominal INTT ladder configuration

ladder tilt angle = 11.5-14 deg.

Si sensor thickness = 200 μm



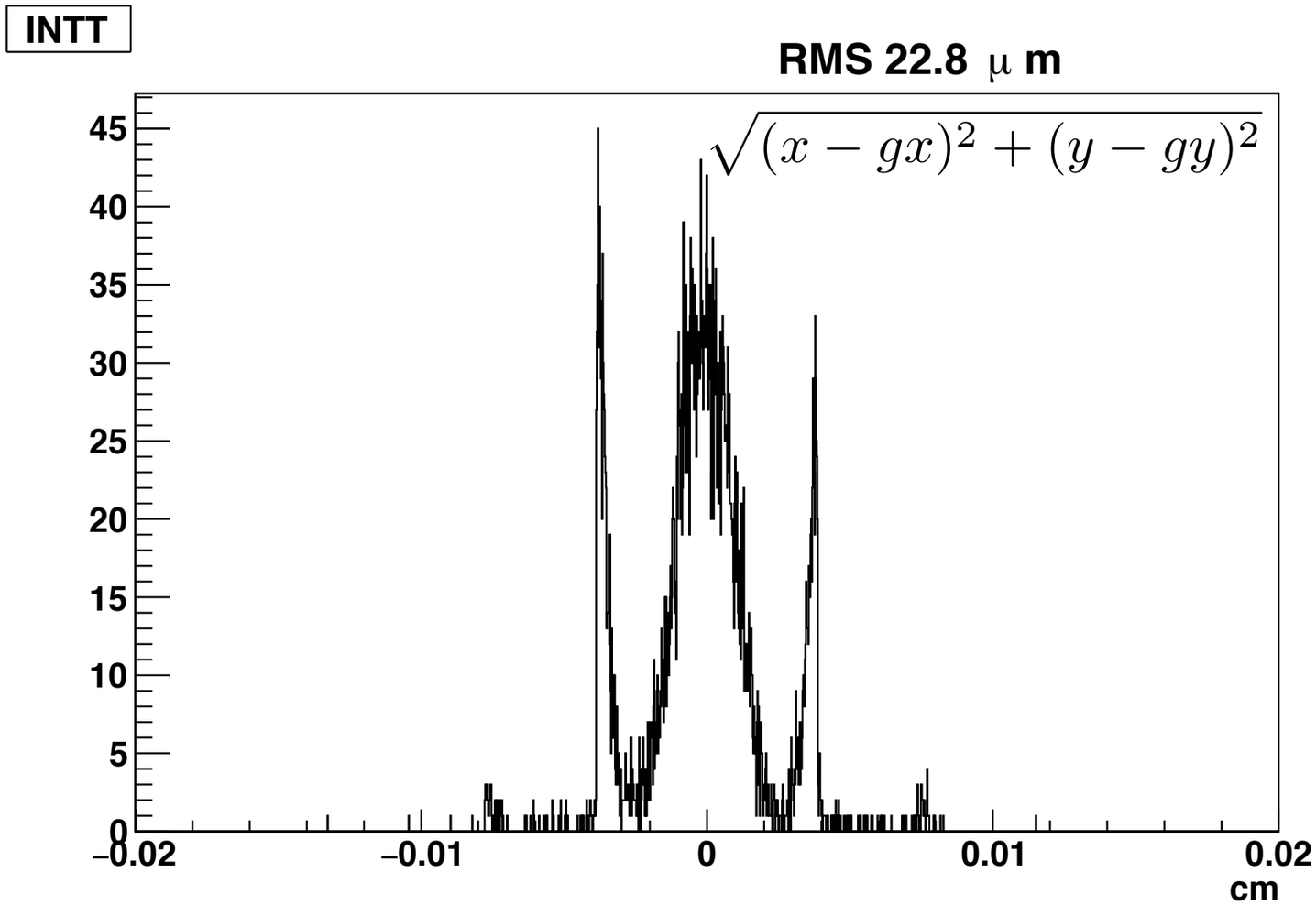


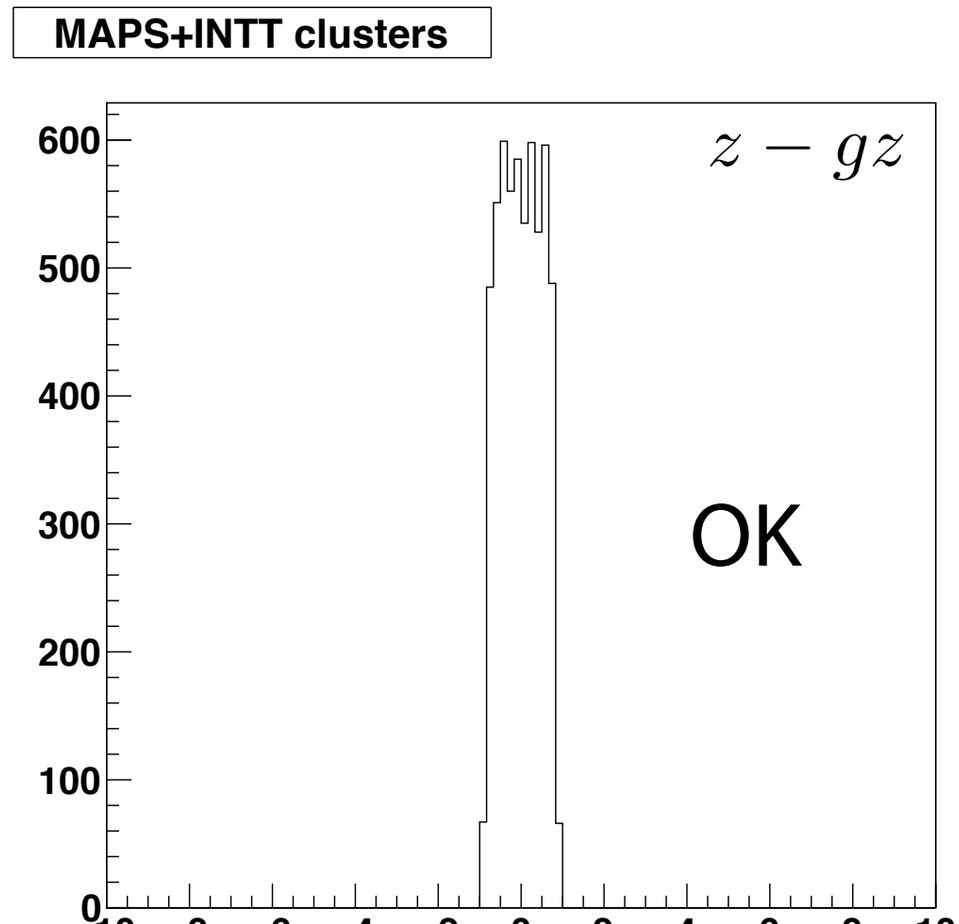
- Peak at 78 μm corresponding to the strip size
- Peak at ~0 μm slightly shifts to negative

Special INTT ladder configuration A

ladder tilt angle = 0 deg.

Si sensor thickness = 200 μm



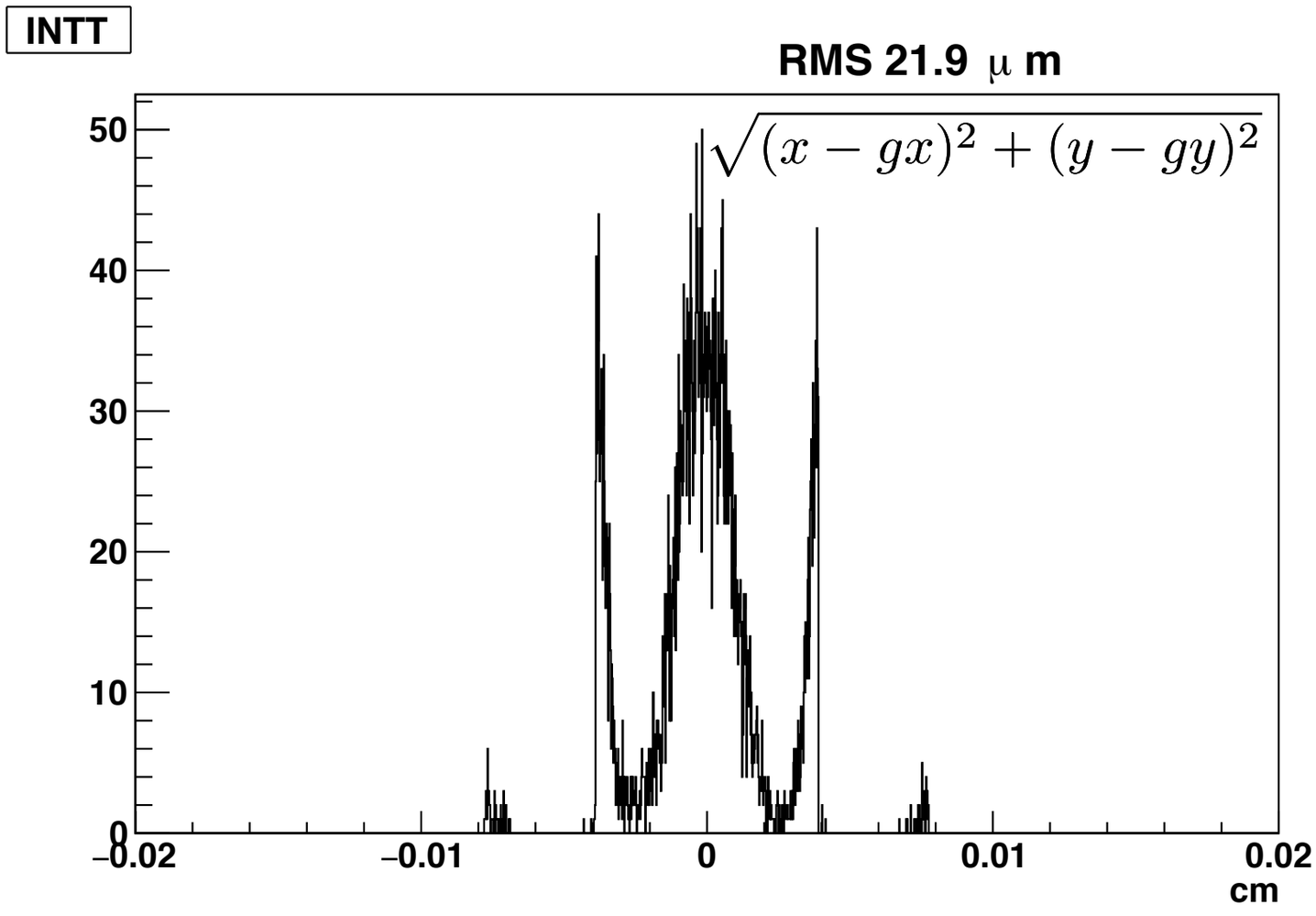


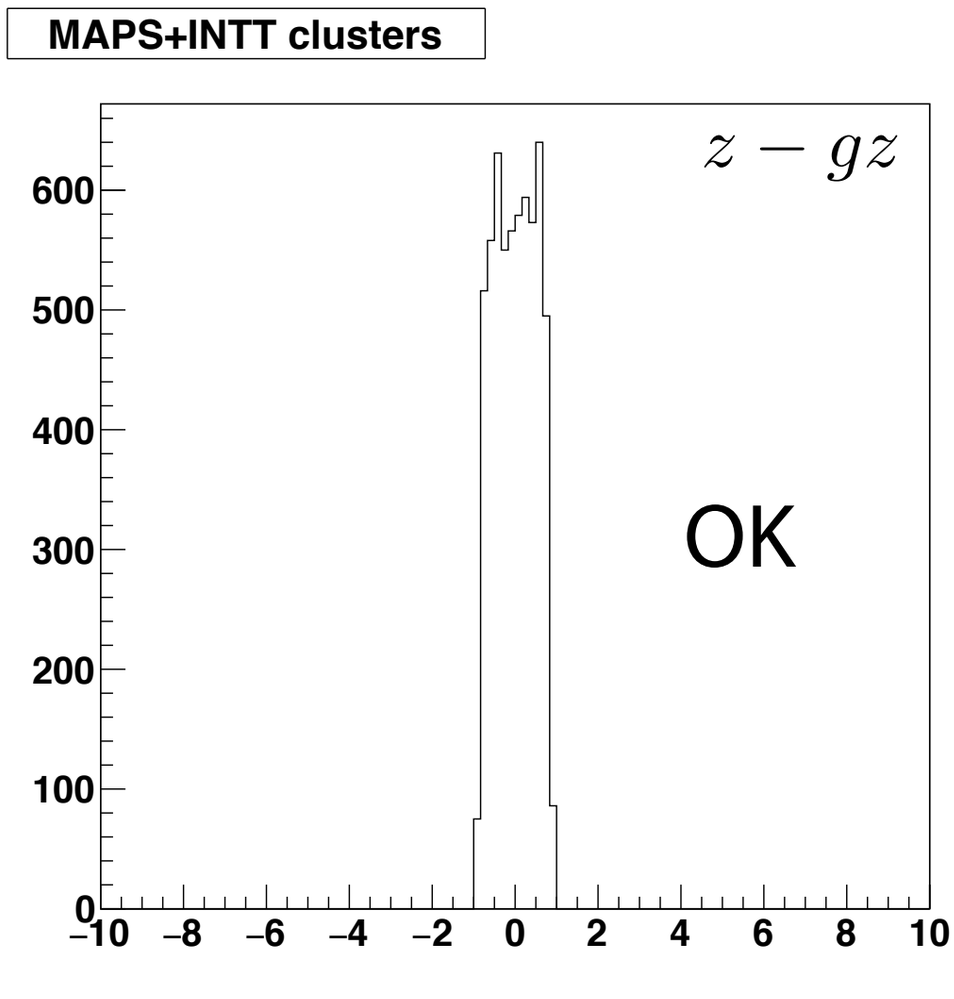
- Peak at +/-39 μm corresponding to the half strip size
- Peak at ~0 μm is exactly 0 μm

Special INTT ladder configuration B

ladder tilt angle = 0 deg.

Si sensor thickness = 10 μm





- Peak at +/-39 μm corresponding to the half strip size
- Peak at ~0 μm is exactly 0 μm

According to the results:

- ladder tilt angle 0 deg. → Offset of the peak around 0 μm disappears.
- thiner Si sensor → no special change except for fewer fake hits > 39 μm

Thoughts and summary

- Reconstructed “cluster” position is obtained by an weighted average where positions of each “hit” is weighted by their ADC values.
- Conversion from energy deposit to 8-bits ADC is still tentative at INTT.
- If energy deposits are almost always regarded as ADC=1 (or some other values), weighted average faulty works and gives simple average, i.e. the middle of neighboring two strips.
- I’m now checking how cluster position behaves by changing ADC gain factors.